[Nicholas Poussin and his Localities. At top—Poussin, from a Portrait by himself. Vignettes on the right—Louviers; Peasants of the Department of Eure; Château Gaillard. Vignettes on the left—Evreux; Pont-Audemer.—From Sketches by Sorrieu and Jules David.]

LOCAL MEMORIES OF GREAT MEN.

Nicholas Poussin.

The local memories of an artist who, like Poussin, rose to eminence against every adverse fortune,—whose gentle manners and innocent life were unruffled by the sneers of envy, and unseduced by the allurements of licentiousness, present features of unusual interest to the admirers of painting. By the term admirers, we do not mean those who only value the art of painting for the pleasure it may afford to the eye, but those who, in the spirit of this great artist, believe that it conduces to the virtue, and, of consequence, to the happiness of mankind. "To the young artist," says Maria Graham, "the life of Poussin is a beacon to guide him through every difficulty: an encouragement beyond that which any patronage can afford; for it proves that, in despite of outward circumstances, genius, aided by industry, will be its own protector, and that fame, though she may come late, will never ultimately refuse her favours to real merit." The cause of his success appears to have been, that Poussin considered whatever was worth doing at all was worth doing well; and that he verified his own emphatic words, replying, when asked late in life by Vigneul de Marville how he gained so high a reputation amongst the great painters of Italy, "I have neglected nothing." Every science that he could study consistently with the practical part of his art attracted his attention and shared his ardour; and in

his favourite pursuit he considered that extensiveness of surface was by no means indispensable to grandeur of design. Hence all his works exhibit the results of profound thought, diligent study, and accurate observation, and, with but very few exceptions, are executed on a moderate scale. We find none of his pictures reminding us of the whimsical, but happy description of Peter Pindar, where he satirizes the

"Acres of canvas paved with paint."

The general objection made to his compositions is that they partake too much of the forms and attitudes of the sculpture of antiquity, an objection that is well founded. Indeed, in one of his pictures, that of 'The Israelites gathering Manna,' he has even ventured to adapt to his subject the figures of the Laocöon, the Niobe, the Seneca, the Antinous, the Wrestlers, the Diana, the Apollo, and the Venus de' Medici.

The family of Poussin was noble, but poor. His father, Jean Poussin, was a native of Soissons, and served with credit in the regiment of Tavanes during the reigns of Charles IX., Henry III., and Henry IV.; but the poverty of the royal coffers, during that unhappy period, had thrown all the expenses of a military life upon himself, and, like many of his brave fellow-soldiers, he was reduced to the greatest indigence. After the taking of Vernon, in which town he then resided, he married Marie de Laisement, the widow of Le Moine, a lawyer of that place; and having quitted the military service, he retired to Andelys in Normandy, some time in the year 1592, where, in June, 1594, his son Nicholas was born. The earliest indications of a taste for art displayed themselves in Poussin while yet a child, and Passeri, who was contemporary with him, says, in 'The Lives of Painters, Sculptors, and Architects,' that his schoolmaster used frequently to chide him for making designs on the margins of his books, instead of attending to his regular studies. The beauty of the scenery round Andelys, situated as it is amongst the hills on the right bank of the Seine, and including in its neighbourhood all the subjects represented in the engraving, doubtless fostered the taste of Poussin for landscape composition, a taste which was so strong as not to be overcome even when the subject of his pencil was historical composition. Of this prevailing fancy Fuseli complains, for he says, "The excellence of Poussin in landscape is universally allowed, and when it is the chief object of his picture precludes all censure; but considered as the scene or background of an historical subject, the care with which he executed it, the predilection which he had for it, often made him give it an importance which it ought not to have: it divides our attention, and, from an accessory, becomes a principal part." The sketches which he made amidst this delightful scenery attracted the attention of Quentin Varin, a native of Amiens, who then resided in Andelys, and who taught him the rudiments of his art.

It was with difficulty that Jean Poussin could be persuaded to allow his son to adopt painting as a profession; but having consented, Nicholas soon found that the instructions of Varin were insufficient, and at the age of eighteen, friendless and nearly moneyless, he went to Paris, and studied successively under Ferdinand Elle, of Malines, a portrait painter, and L' Allemant, a painter of history, who was deficient, however, in all but the mechanical part of his art, and with whom Nicholas remained only a few weeks. While with the latter, the authoress before quoted says he "contracted a friendship with Philippe de Champagne, which was afterwards of singular advantage to him;" but M. Gence, in the *Biographie Universelle*, says that this is a mistake, for that Philippe de Champagne did not go to Paris till 1621. A young nobleman of Poitou became a generous friend to Poussin, and furnished him with money to enable him to pursue his studies; and after the young painter had diligently copied many drawings of Raffaelle and Giulio Romano, in the collection of M. Courtois, and otherwise advanced himself in his art, invited him to Poitou, with the view of further patronage and liberal employment. The want of taste, however, of this nobleman's mother did not permit her to value the artist's ability, and he was treated in the light of a domestic drudge, and accordingly he withdrew in disgust, and set out on foot on his return to Paris. In this journey he supported himself by his pencil, accepting any employment and at whatever remuneration he could obtain; the former being so severe, and the latter so scanty, that on arriving at the capital he was attacked by a dangerous sickness, brought on, it is supposed, by extreme labour and a scanty sustenance. He returned to Andelys, where he remained with his family a year, occupying himself in painting both in distemper and oil, for such prices as he could obtain. On his recovery he again proceeded to Paris, and became acquainted with the Cavaliere Marino, the Italian poet, with whom he lived on terms of the closest intimacy, and by whom he was invited to Rome, whither he removed in 1624. As a residence in the 'Eternal City' was the chief wish of the painter's heart, he conceived that he should there live in tranquillity, but his friend soon after dying, and the Cardinal Barberini, to whose notice Marino had introduced him, being sent on an embassy to France and Spain, he found himself in a foreign city, destitute of patrons, and without any means of living, excepting what his pencil might afford. Still undaunted, he pursued his art with fervour, selling some of his noblest works for sums barely sufficient to pay for the materials on which they were painted, until the return of the Cardinal to Rome extricated him from his difficulties. For that dignitary he painted his celebrated picture of the 'Death of Germanicus,' and the 'Taking of Jerusalem by the Emperor Titus.' He soon after painted the 'Martyrdom of St. Erasmus,' for St. Peter's, which is now in the pontifical palace of Monte Cavallo. For the Cavaliere de Pozzo he painted his first series of the 'Seven Sacraments of the Romish Church,' six of which are now in the collection of the Duke of Rutland, at Belvoir Castle; one having been destroyed by fire in 1816. In the years 1644 and 1647 he also painted a second series, with variations, for M. de Chantelou, which were formerly in the Orleans collection, and are now among the most valued of the pictures belonging to Lord Francis Egerton. They were bought by the late Duke of Bridgewater for 4900 guineas.

Of the remaining history of this great painter, it will be sufficient in this place to say, that in 1639 he was induced to return to Paris, where he was appointed principal painter to Louis XIII., and had many commissions to execute important works. The envy of contemporary artists disgusted him; and in three years, under the pretence of fetching home his wife, and settling various affairs in Italy, he withdrew from France, and finally settled at Rome, were he died in 1665, in the seventy-first year of his age. The estimation in which he was held by Louis XIII. may be gathered from the fact, that in the brevet of his appointment of first painter to the king occur the following passages:—"His Majesty has chosen and retained him to be his first painter, and in that capacity has given him the general direction of all the works of painting and embellishment that he may henceforward order for the decoration of his royal houses; ordering also, that none of his other painters shall execute any of their works for his majesty without having first submitted their designs to the said Sieur Poussin, and received his directions and advice there-

upon. And in order to give him the means of maintaining himself in his service, his majesty grants him the sum of three thousand livres as a yearly salary;" and "his Majesty has also granted to the Sieur Poussin the house with the garden lying in the middle of his majesty's gardens of the Thuileries."

We have already referred to the opinion of Fuseli on the merits of Poussin as a landscape painter, to which may be added that of Lanzi, who observes,—"I do not mean to exaggerate, when I say that the Caracci improved the art of landscape painting, and Poussin brought it to perfection."

With regard to the imitation of the antique in his figures, Reynolds seems to consider that it arose more from similarity of thought than plagiarism of form. He says, "Poussin lived and conversed with the ancient statues so long, that he may be said to have been better acquainted with them than with the people about him. I have often thought that he carried his veneration for them so far, as to wish to give his works the air of ancient paintings. . . . No works of any modern have so much the air of antique painting as those of Poussin. His best performances have a remarkable dryness of manner, which, though by no means to be recommended for imitation, yet seems perfectly correspondent to that ancient simplicity which distinguishes his style. Like Polidoro, he studied the ancients so much, that he acquired a habit of thinking in their way, and seemed to know perfectly the actions and gestures they would use on every occasion." Fuseli, on the other hand, charges him with plagiarism, a charge fully borne out by the picture before referred to, 'The Israelites gathering Manna.' That learned and acute critic observes,—"Though Poussin abstracted the theory of his proportions from the antique, he is seldom uniform and pure in his style of design: ideal only in parts, and oftener so in female than in male characters, he supplies, like Pietro Testa, antique heads and torsos with limbs and extremities transcribed from the model."

That he was devotedly attached to the forms of the antique is obvious, and in a letter to M. de Chantelou, he admits that he had applied to painting the theory which the Greeks had introduced into their music; the Dorian for the grave and serious, the Phrygian for the vehement and passionate, the Lydian for the soft and tender, and the Ionian for the riotous festivity of his bacchanals. Still he did not neglect the advantages to be derived from the study of the excellences of Raffaelle and Guilio Romano, the former of whom appears to have most deeply excited his admiration. Indeed it has been considered, and with great justice, that he can be hardly said to be inferior to that sublime painter in the purity and majesty of his conceptions, the select beauty of his forms, the grace and dignity of his attitudes, and his just and animated expression of the passions. His compositions, the result of a learned and profound meditation, are simple, grand, and judicious; and it will not be denied that his works are distinguished by a refined and classical observance of the propriety of costume.

To his colouring many objections have been taken, and it must be admitted that in his historical compositions the prevalence of the russet tint and the unbroken red are far from being harmonious or rich. De Piles, indeed, goes so far as to say that he is cold and feeble as a colourist, but to this sweeping censure Mr. Bryant makes the following reply:—"It did not occur to that critic, that brilliancy of tints and splendour of colour would ill accord with the solidity and simplicity of effect so essential to heroic subjects; and that the sublime and majestic would be degraded by a union with the florid and the gay. The elevation of his mind is conspicuous in everything he undertook; and we are not less impressed with the beauty and grandeur of the scenery he displays in his landscapes, than with the dignified characteristics that distinguish his historical works."

In the last letter this eminent man ever penned he thus expresses himself concerning that part of his art which consists of "things which are not to be learned, and which make an essential part of painting. First, the subject must be noble. It should have received no quality from the mere workman; and to allow scope to the painter to display his powers he should select that most capable of receiving beautiful form. He must begin by composition, then ornament, propriety, beauty, grace, vivacity, costume, probability, and judgment in each and all. These last belong solely to the painter, and cannot be taught. They are the golden bough of Virgil, which no man can find or gather, if his fate do not lead him to it. These nine parts deserve, on several accounts, to be treated by some good and learned author." We may close this paper by a short description of the person of Poussin in aid of the portrait represented above. He was tall and well proportioned; his hair black, but it became very grey towards the end of his life; his complexion olive, his eyes blue, his nose rather long, his forehead large, and his looks altogether dignified yet modest.

BREAKWATERS.

I. CHERBOURG.

The nature and objects of *breakwaters*, to which public attention has been lately directed by the promulgation of new projects, are not in general well understood, except by persons residing at our seaports or connected with maritime affairs. When ships are lying at anchor in a port or harbour exposed to the action of the sea, they are placed in some danger, and their crews are greatly incommoded, by the incessant rolling of the waves towards them. Any artificial erection which will stem these waves constitutes a *breakwater*, though it may not be so designated. Some of these obstructions are merely sunken vessels placed across the entrance of the harbour; others are stone or wooden projections from the mainland out into the sea, such as the moles at Genoa and Naples, or the piers at Ramsgate and Margate. But those to which the name of "breakwater" has been especially applied are insulated dikes of stone, forming a kind of artificial ridge of rock extending nearly across the entrance to a harbour, and unconnected with the mainland. The nature of the roadstead or harbour, and the extent to which it is frequented by shipping, determine the kind of barrier which shall be formed.

There have been two breakwaters constructed in modern times, which, from the magnitude of the arrangements connected with their construction, the time and money expended, and the widely different results produced, have obtained more notoriety than any others. These two are those of Cherbourg and of Plymouth.

During the numerous wars between England and France, in the seventeenth and eighteenth centuries, it was found that while England had admirable ports and harbours on her southern coast, whence fleets could pour out into the Channel, the French coast opposite to it presented either sandy shores with shallow water, or lofty cliffs dashed against by the sea. M. Cart observes:—"The misfortunes of La Hogue, which all the talents of Tourville could not prevent, taught Louis the Fourteenth that in completing the defence of his frontier by land, he had too much neglected his frontiers on the sea. This great prince, however, profiting by experience, soon dis-

covered that England owed the superiority of her marine to the arsenals which she possessed in the Channel." The great Vauban was sent to examine the northern coast of France, to see whether any arsenal and port could be there constructed. He reported "that the roadstead of Cherbourg possessed the means of attack, of defence, and of protection; that it was very capable of exerting an influence in maritime war, and in their commercial relations with Northern powers: that it was the spot on which the head-quarters should be established on the coast of the Channel; and that it was a good central advanced post towards England."

We see, on referring to a map of France, that Cherbourg is situated on that part of the French coast nearly due south of the Isle of Wight; and that although there is at this spot an inlet of the sea, it is yet completely exposed to winds and waves from the north. Any arrangements therefore for making Cherbourg a post of attack and defence required that something in the nature of a breakwater should be constructed, to stem the violence of the waves, and to form a harbour for the shipping. During the earlier half of the last century many plans were proposed for carrying out this object. One was, to build a fort on each of the points of land which bound the roadstead, and to construct another fort in the midst of the sea, half-way between them, which should serve both as a breakwater and as a garrisoned fort. Another plan was, to construct, at the distance of a league in the sea, a stone dike of two thousand toises in length, leaving three open passages into the roadstead, one at each end and one in the middle. This dike was to have as its nucleus a number of old and worn-out ships filled with stones: these ships were to be floated out to their proper situations, filled with stones till they sunk, and then covered on all sides by masonry.

At length a plan was proposed which ultimately received the sanction of the government. It was a modification and improvement of the plan just spoken of, but, as experience has shown, was bad in principle. It was, to place nearly one hundred isolated structures in the sea, extending in a line across the roadstead or harbour of Cherbourg, and forming a barrier which, though not continuous, was deemed sufficient to stem the power of the waves. The structures were to be immense truncated cones of wood, sunk to the bottom of the sea, then filled to the top with stones, and lastly surmounted by forts of masonry, on which small garrisons might be placed.

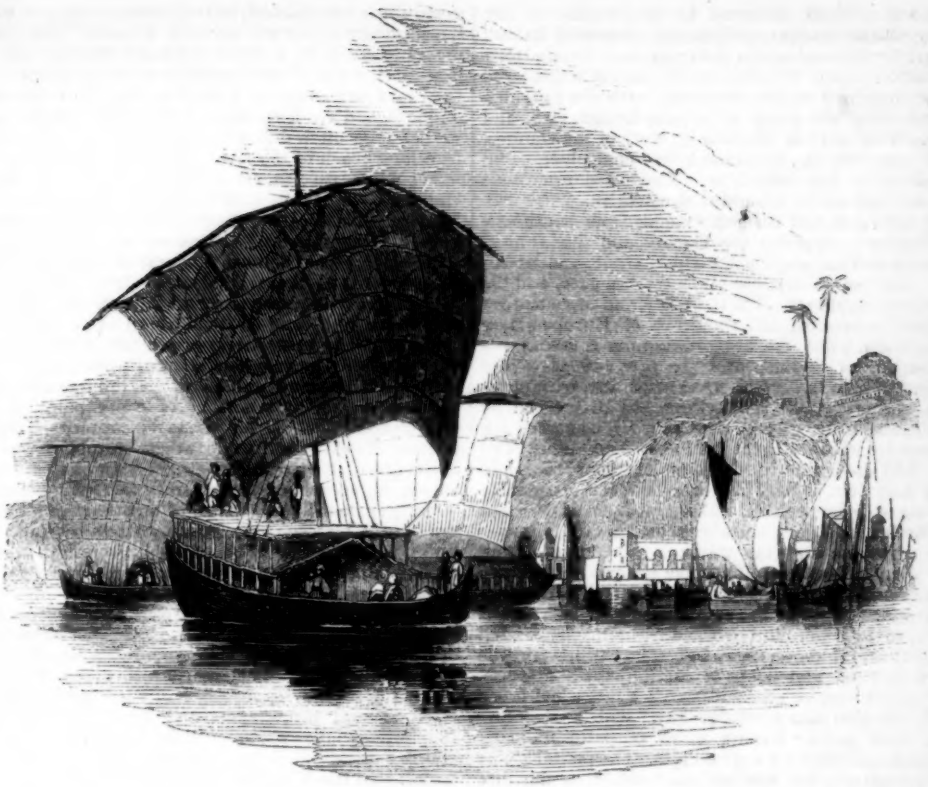
It was considered necessary in the first place to make an experimental trial as to the possibility of constructing and sinking the immense cones which would be required. For this purpose a cone of timber was constructed, thirty-six feet high, a hundred feet in diameter at the top, and a hundred and fifty at bottom, closed in all round, but open at top and bottom. In order that this should float to the spot where it was to be sunk, a number of air-casks were attached to it; a moving-power was then applied, the position was adjusted, the air-casks removed, and the immense machine sunk into the waves.

The experimental trial being deemed satisfactory, arrangements were made for commencing operations at Cherbourg. It was at first proposed to have ninety cones to form the breakwater; but the number was afterwards reduced to sixty-four,—a far higher number, however, than were destined to be built. The cones were to be a hundred and fifty feet diameter at the base, sixty feet diameter at the top, and from sixty to seventy feet in height, the top being a little above the highest tide-level. The interval between the upper part of every two adjacent cones was about seventy feet across, and was proposed to be closed by a chain, whenever it was deemed desirable to keep out foreign ships. Operations were commenced in the year 1784, under the direction of M. Cessart, the engineer who had proposed the plan. More than fifteen hundred artificers and workmen were employed in the work, besides a numerous body of soldiers; and eighty small vessels were employed to carry out stones to fill the cones. By the month of July, 1784, two cones had been constructed, floated out, and sunk; but before the second one could be filled with stones, a storm arose and destroyed a great part of the cone. In the following year, three more cones were sunk; in 1786, five; and in 1787, five more: making altogether fifteen. In the year 1788, three more cones were sunk, which proved to be the last, although little more than one quarter of the proposed number. The truth was, that the Government, sufficiently embarrassed by the political and financial difficulties of that period, became wearied with the slow progress and great cost of the breakwater. The operations were suspended, after the expenditure of about thirteen hundred thousand pounds in six years, and the sinking of about five million tons of stone in and around the eighteen cones. Of the cones themselves, which cost one-third of the entire outlay, and which were expected to brave storms and tempests, one lasted fourteen years, one five years, six four years, and all the other ten went to pieces the year after they were finished.

Two or three years after the cessation of the operations it was proposed to case over the surface of the dike, as it then stood, with large blocks of stone; and to carry the height of the dike, along its whole extent, so far above high-water mark, as to render it capable of receiving batteries at the summit, at the middle, and at the two extremities. So little was done in furtherance of this plan during the period of war that followed, that by the year 1803 the centre portion only of the dike was brought above high-water mark. On this was built a battery, which, together with a garrison of soldiers, was swept away during a violent hurricane in the year 1809.

The condition in which the breakwater has been left is thus described in the 'Encyclopædia Britannica:' —"At present small spots only are visible above the surface of the sea at low-water of spring-tides, and nowhere such spots exceed three feet in height. The intermediate spaces are from three to fifteen feet below the surface; and, taking the average, the whole dike, from one end to the other, may be about four feet below the surface of low-water at the spring-tides. Near the middle, however, there is about one hundred yards where the height rises to eighteen or twenty feet above high-water, but it exhibits only a shapeless mass of ruins. In one spot a large heap of stones has been accumulated, as if to try how much weight might safely be trusted upon it, before the attempt be made to rebuild the fort. The largest of the stones in this mass may be about four tons, and they decrease to the size of two or three cwt. Of the remainder of the dike very few parts are visible at low-water; and at this moment the greater part is four feet below the surface of low-water. It is sufficiently high, however, to break the face of the waves, and to make the port of Cherbourg a safe anchorage, in some winds, for about forty sail of the line.

Hedges.—The Dwarf Oak is a handsome prickly-leaved evergreen, making such a tall close hedge as to afford not only good shelter to the field, but defy either pig or bullock to break through, while it furnishes a good annual crop of pig-food in its acorns; besides a crop of that valuable article in dyeing, the gall-nut. The wonder is, that from the above qualities it has not been introduced into England, where it would soon change the whole winter aspect of the country, the hedge-rows exhibiting throughout the year the bright green freshness of perpetual spring.



[Boats on the Ganges.]

THE GANGES.

The Ganges flows through some of the richest portions of the earth, embellished by the fertility and splendour of an exuberant vegetation, and peopled by sixty millions of the human race. Descending from the Himalaya Mountains, where it has its source, it soon reaches the plains, and after receiving many tributaries, some of which are larger than the Rhine, it empties its waters into the ocean by several mouths, completing a course of above fifteen hundred miles, and draining a tract of country eight times larger than England.

The country through which the Ganges flows is divided into three natural districts: 1. The great plain of Bengal, which we shall first describe, extending from south to north two hundred and eighty miles by one hundred and eighty wide, and comprising four marked tracts of country, commencing with the Sunderbunds, a district between the mouths of the Ganges and the Brahmapootra. This is the most unhealthy part of India, and its appearance is thus described by Bishop Heber:—"Nothing met the eye but a dismal and unbroken line of thick black wood and thicket, apparently impenetrable and interminable, which one might easily imagine to be the habitation of everything monstrous, disgusting, and dangerous, from the tiger and the cobra de capello, down to the scorpion and mosquito—from the thunder-storm to the fever." The Sunderbunds are swampy all the year round, entirely uncultivated, and inhabited only by a miserable population employed in cutting timber. The next part is "the country subject to inundation," lying between the Ganges and its branches, and also between that river and the Brahmapootra, as far as 25° north latitude. At the junction of the two rivers an immense tract of country is overflowed to the depth of many feet, and the towns and villages are built on artificial mounds. The depth of alluvial earth is often one hundred and thirty feet, and wells cannot be sunk. As soon as the waters subside, rice is sown, and this district could supply the whole of Bengal with that staple article of food. In these alluvial tracts the rivers easily change their course, and there are old beds of the Ganges at a distance of several miles from the present channel. The third district, which is partly situated west of the Hooghly, and partly north of the twenty-fifth degree of north latitude, is not subject to inundation, except near the rivers in the northern part; but the soil abounds with springs, and irrigation is extensively practised. The country is luxuriantly productive in cotton, indigo, sugar, and grain; and the silk-worm is cultivated. Towards the northern extremity of this tract there are large portions of waste land. The fourth district, situated between the plain of the Ganges and the lower region of the Himalaya Mountains, is called the Tarai, or 'the swamp,' and in the province of Bengal has a width of from twenty to twenty-five miles, but narrows to the width of a few miles towards its north-western extremity. The soil is a rich alluvium, and the waters which flow from the higher regions form a swamp in consequence of the slope being insufficient to drain them off. The vegetation is exceedingly rich and profuse; but the heat, acting upon so moist a surface, engenders disease, and the only inhabitants, except elephants, rhinoceroses, tigers, buffaloes, and other wild animals, are a few wood-cutters.

The second great district drained by the Ganges is divided from Bengal by the river Coosy, and the Rajmahal

Hills, and extends westward to the junction of the Jumna with the Ganges, comprising the plain of Bahar; and here the moist alluvium of Bengal is exchanged for a sandy soil. No part is inundated, but the soil is rendered highly productive by irrigation, and resembles a garden, bearing luxuriant crops of opium, indigo, rice, and cotton. That part of the district north of the Ganges, though very fertile, is swampy in some places, and cultivation is less advanced. There are numerous lakes, and the earths abound with saltpetre.

The third and last district extends from south-east to north-west, between the Ganges and the Jumna, and comprises the plain of the Doab, Oude, and Rohilcund. The soil is dry, the climate temperate, and the palm-tree disappears. Wheat, barley, and other similar crops are cultivated, and the fruits of Europe arrive at perfection, while the heat of summer is favourable to rice, cotton, indigo, and the productions of the tropics. Thus the great river and its tributaries water regions whose productions are diversified by climate and other causes, and hence it becomes the medium by which a great traffic is facilitated. The Ganges is navigable throughout the year for small boats to the foot of the Himalayas, and for six months for boats of a larger size. Major Rennel stated that the number of boats employed on the Ganges was thirty thousand, and the traffic is now much more active than in his time. They are generally crazy and ill-appointed vessels. The Bengalee and Chittagong vessels have high heads, with large clumsy rudders suspended by ropes, and worked by helmsmen raised at a great height above the vessel. The European mode of rigging brigs and sloops is coming slowly into use. The 'panchway,' or passage-boat, is a large and broad vessel "shaped like a snuffer-tray," with a deck fore and aft, the middle having a roof of palm-branches, over which is thrown a coarse cloth. The master steers with a long oar, and another man stands in the fore part with a long oar, which he uses for sounding as well as in navigating the boat, and six cross-legged rowers impel her onward with short paddles, which are employed, however, in the same way as oars: a rude sail is hoisted when the wind is favourable. Bishop Heber describes a Bengalee boat as "the simplest and rudest of all possible structures. It is," he says, "decked over, throughout its whole length, with bamboo, and on this is erected a low light fabric of bamboo and straw, exactly like a small cottage without a chimney: this is the cabin, baggage-room, &c.; here the passengers sit and sleep; and here, if it be intended for a cooking-boat, are one or two such ranges of brick-work like English hot-hearths, but not rising more than a few inches above the deck, with small, round, sugar-loaf holes, like those in a lime-kiln, adapted for dressing victuals with charcoal. As the roof of this apartment is by far too fragile for men to stand or sit on, and as the apartment itself takes up nearly two-thirds of the vessel, upright bamboos are fixed by its side, which support a kind of grating of the same material immediately above the roof, on which, at the height probably of six or eight feet above the surface of the water, the boatmen sit or stand to work the vessel. They have for oars long bamboos with circular boards at the end, a longer one of the same sort to steer with, a long rough bamboo for a mast, and one or sometimes two sails of a square form, (or rather broader above than below,) of a very coarse and flimsy canvas. Nothing can seem more clumsy or dangerous than these boats. Dangerous I believe they are, but with a fair wind they sail over the water merrily." The 'budgerow,' a corruption from the English word barge, though a clumsy, is far from being an inelegant-looking object on the water. It is used as a passage-boat, and is generally accompanied by a luggage-boat, in which the cooking is carried on; and a small 'dinghee' is useful to keep up a communication between the two boats in case one of them becomes fixed on a shoal. The 'pulwars' are a class of boats used for the conveyance of goods, and are both clumsily built and ill-managed, so that it is often difficult to avoid being run foul of. In a long reach of the river, the large 'pulwars,' with sails gliding past in all directions, reminded Bishop Heber of the Manks jagger-boats at the mouth of the Mersey. The floating shops are curious and characteristic. The nautical tradesman sets out when the state of the river is most favourable, after the rains, and proceeds to Agra, Meerut, or Lucknow, by their respective rivers, ascending as far upward as his boat can carry him, and furnishing glass, cutlery, perfumery, and a great variety of articles to the people of the upper provinces. The Ganges owes a great deal of its animation and interest to the innumerable boats which glide on its bosom. At every point of land may be seen what Heber terms "a coppice of masts," waiting for a wind, while other vessels, with their masts down, drift with the stream. In one part of his voyage he speaks of the number of fishing-boats as "really extraordinary," most of them carrying a small sail spread between two bamboos, one on each gunwale; and sometimes two of the crew might be seen, each holding a garment extended by the feet and hands to catch the favouring breeze.

The views on the banks are not less interesting or lively than those on the river. Even the tediousness of tracking or hauling is compensated by the beauty of inland objects. The river itself, glistening in the sun, with its moving scenery of boats and vessels, is often several miles wide, and at the period of the inundations the voyager sails over the inundated country amidst villages raised slightly above the water. In tracking, the boat is often not more than two or three yards from the shore; and the late Miss Roberts, in her 'Scenes and Characteristics of Hindostan,' thus describes the moving panorama which then passes before the voyager:—"The smallest villages on the banks of the Ganges possess landing-places, which we vainly seek in the richest and most populous parts of Europe. From an ample terrace, at the summit of the bank, broad steps descend into the river, enclosed on either side by handsome balustrades. These are not unfrequently flanked with beautiful temples, mosques, or pagodas, according to the creed of the founders; or the ghaut is approached through a cloistered quadrangle, having the religious edifice in the centre. The banyan and the peepul fling their sacred branches over the richly-carved minarets and pointed domes, and those in the Brahminee villages are crowded with troops of monkeys, whose grotesque and diverting antics contrast strangely with the devotional attitudes of the holy multitudes performing their orisons in the stream. Nothing can be more animated than an Indian ghaut: at scarcely any period of the day is it destitute of groups of bathers, while graceful female forms are continually passing and repassing, loaded with water-pots, which are balanced with the nicest precision on their heads. The ghaut, with its cheerful assemblage, disappears, and is succeeded by some lofty overhanging cliff, wooded to the top, and crowned with one of those beautiful specimens of Oriental architecture scattered with rich profusion over the whole country. Green vistas next are seen, giving glimpses of rustic villages in the distance, and winding alleys of so quiet a character, that the passer-by may fancy that these sequestered lanes lead to the cottage-homes of England,—a brief illusion, speedily dissipated by the appearance of some immense herd of buffaloes. The savage herds

are left behind, and the scene changes again; deep forests are passed, whose unfathomable recesses lie concealed in eternal shade; then cultivation returns; wide pastures are spread along the shore, covered with innumerable herds; the gigantic elephant is seen under a tree, fanning off flies with a branch of palm, or pacing along, bearing his master in a howdah through the indigo plantations. European dwellings arise in the midst of park-like scenery; and presently the wild barbaric pomp of a native city bursts upon the astonished eye." Heber also remarks that some of the villages on the banks of the river, surrounded "by natural meadows and hedge-rows, were so like English, that but for the cocoas we could have supposed ourselves at home." Some of the villages are as neat as any of those in Europe, shaded by banyans, palms, peepuls, tamarinds, and various flowering trees, and situated in the midst of fields of rice, cotton, sugar-canes, or indigo—the latter, when cut, smelling like new-mown hay.

The navigation of the Ganges by the common river-boats is far from being sufficiently quick for commercial purposes. At the period of the inundation the navigation is most speedy, the wind generally blowing from a quarter which enables a vessel to stem the current by sails, while if proceeding downward the current bears her rapidly along. In the dry season their course down the stream does not exceed forty miles in twelve hours, but at other periods from fifty to seventy miles are performed in the same time. In ascending the stream the boats seldom advance more than twenty miles a-day, and when tracking is necessary, which is done by men and also by oxen, a much less distance is accomplished. In 1833, by the most rapid mode of land travelling from Meerut to Calcutta the journey was performed in twelve days, a distance of eight hundred miles, but at an enormous cost, with great fatigue and discomfort. The quickest conveyance for a small package occupied five weeks. By water the voyage to Calcutta was about seven weeks, and from Calcutta the average time exceeded four months, and the transit of heavy goods often occupied six and seven months by the clumsy native craft. Meerut was in effect as far from Calcutta as the latter was from London, and the costs of freight and insurance were even higher. The voyage from Calcutta to Allahabad occupied between two and three months. In consequence of the obstacles to the upward navigation of the river, many articles were unattainable in the upper provinces, and the profitable interchange of commodities between the different provinces was interrupted and obstructed. These circumstances induced the late Lord William Bentinck to adopt measures for giving to the rivers of India the advantages of steam-navigation; and in 1832 four iron steamers of sixty tons each, drawing two feet water, were made in London, and in 1834 they were plying on the Ganges between Calcutta and Allahabad with the most signal success. In 1837 their number was increased, and there is every prospect of the internal navigation of the British possessions in India being carried on exclusively by steam-boats, a result which will be of the greatest importance in a military and political as well as a commercial point of view. Ships on arriving in the Hooghly were generally two or three weeks in working up to Calcutta, and the unhealthy Sunderbunds became the grave of many a European. Now, the arrival of the ship is announced by telegraph, a steamer comes down from Calcutta, and she is quickly towed out of this region of death, and reaches Calcutta in two or three days, instead of as many weeks.

TEMPLE OF DIANA AT EPHESUS.

The temple of Diana at Ephesus was counted as one of the seven wonders of the world, on account of its extent and magnificence, at the period of the birth of Christ. The same rank was held by an earlier temple than that which existed at this time. Xerxes, the Persian king, who destroyed the idol temples wherever he came, spared that one on account of its extreme magnificence and grandeur: but it was set on fire, on the night Alexander the Great was born, and burned to the ground. This was done by a man named Erostratus, who confessed that he had done the deed to immortalise his name by the destruction of this wonderful building. To baulk him, it was decreed that his name should never be mentioned; but such a decree served only to make his name more memorable. Alexander offered to rebuild the temple, on condition that the Ephesians would allow his name to be placed in front; but this offer was respectfully declined. The materials saved from the fire were sold, and the women parted with their jewels; and the money thus raised served to carry on the work till other contributions came in. These were sent most liberally from all parts, and in a short time amounted to an immense treasure.

The new temple stood between the city and the port, and was built at the base of a mountain, at the head of a marsh, which situation is said by Pliny to have been chosen as less liable to earthquakes. It however had the effect of doubling the expenses; for vast charges were incurred in making drains to convey the water that came down the hill into the morass and the Cayster. It is said that in this work so much stone was used as exhausted all the quarries of the country. To secure the foundations of the conduits and sewers, which were to support the weight of so prodigious a structure, Pliny says that there were laid beds of charcoal, well rammed, and over them others of wool, and that two hundred and twenty (or, as some copies read, one hundred and twenty) years elapsed before this grand temple was completed by the contributions of all the cities of Asia (Proper?). It was four hundred and twenty-five feet in length and two hundred and twenty in breadth, supported by one hundred and twenty-seven marble pillars sixty feet high, of which thirty-six were curiously sculptured and the rest polished. The pillars were said to have been the gifts of as many kings, and the bas-reliefs on one of them were wrought by Scopas, one of the most famous of ancient sculptors; and the altar was almost entirely the work of Praxiteles. The first architect, and he who appears to have planned the whole work, was Dinocrates, who built the city of Alexandria, and who offered to carve Mount Athos into a statue of Alexander. There are many coins extant which bear the heads of different Roman emperors, and exhibit on the reverse the temple, with a frontispiece of two, four, six, and even eight columns. It was despoiled and burnt by the Goths, in the reign of the emperor Gallienus. The glory of Ephesus and its temple must, however, have been dimmed before this by the progress of Christianity. The city depended for its wealth upon its temple, which attracted from all parts multitudes of worshippers: the people knew this; and hence their clamour on the preaching of the gospel by St. Paul, and the effect of the representation made by Demetrius. The city and temple rose and flourished and fell together. The former is now an inconsiderable village; and of the latter nothing remains but some fragments of ruin and some broken columns.

The heathen goddess Diana was primarily the moon, but was worshipped under a variety of names, characters, and forms. The same people sometimes worshipped the different qualities attributed to her, by different

names and different impersonations. She was the goddess of hunting, of travelling, of chastity, of childbirth, of enchantments, &c.; and in her different characters she was Diana, Luna, Lucina, Hecate, Proserpine, besides many other names derived from the places in which she was worshipped. Her most usual figure was that of a huntress, with a crescent on her head, and attended by dogs. But the Ephesian Diana was differently represented from any other, being figured with several tiers or rows of breasts—intimating that she was at Ephesus regarded as Nature, the mother of mankind. The image wore a sort of high-crowned cap or mitre; and its feet were involved in the garments. Notwithstanding what the "town-clerk" says, in Acts, c. xix., v. 35, about "the image which fell down from Jupiter," it seems that Mucianus, who had been three times consul, and whose authority Pliny follows (lib. xvi., 40), learnt at Ephesus that this famous image was the work of a very ancient sculptor named Canetias. As he further states that the original statue had never been changed, it must have been the same to which the "town-clerk" there refers. It seems to have been an ugly little statue, made of several pieces of wood—generally said to be ebony, but Mucianus thought vine-wood—which precludes the otherwise possible idea that the *material* might have fallen from the sky in the form of an aërolite; and shows that the priests availed themselves of the remote antiquity and the uncouth form of this image to persuade the people of its divine origin.—*From the Pictorial Bible.*

The Whirlpool of Niagara.—The river, which has gradually contracted its channel very much, after passing the great white sheet of the American Fall, proceeds in a curved form towards the north-west; and after falling over tremendous rapids, suddenly turns at right angles to its former course, and runs towards the north-east, still hemmed in by the precipice, which now increases in altitude. Here it has scooped out a vast basin in the rocks, of a circular form; and the rushing and roaring waters, entering the narrow gorge from the south-east, strike by their impetus with such force on the perpendicular wall of the opposite gorge, that an under-current is immediately created, and the waters whirl in a dizzy vortex, until they find egress towards the north-east, between the precipitous walls of the chasm. As the rock is very lofty here (between two and three hundred feet), the view from above is so distant, that very little but the faint whirling or concentrically enlarging circles of the water can be traced; for the largest trunks of trees which are spinning in its eddies seem there no bigger than sticks. It is from below that the curious visitant must see the effect. But the descent is dangerous from the vicinity of the Table Rock, and it is necessary to go back about a mile on the road, and ask permission to cross a farmer's grounds, where there is a path more accessible. Here, after crossing a field or two, you enter into a beautiful wood, and, going through it for a quarter of a mile, begin to descend by a narrow, obscure, and winding path, cut out of the mountain, which is covered with the primæval forest. The descent is not very difficult, perfectly safe, and with a little expense would be pleasant. It leads to the centre of the bay-coast of the whirlpool, where there are but few rocks, and a narrow shingle beach. Here you see the vastness of the scene, the great expanse of the circular basin, the mass of mountain which encloses it almost to its very edge, and the overhanging Table Rock, nearly like that at the Falls, and probably produced by a similar cause, the disintegration of the slate beds under the more unyielding limestone. So extensive, however, is the surface of water, that the huge trunks of trees floating in the concentric circles of the whirling waters, when they reach their ultimate doom in the actual vortex, appear still not larger than small logs. They revolve for a great length of time, touching the shores in their extreme gyrations, and then, as the circles narrow, are tossed about with increasing rapidity, until, in the middle, the largest giants of the forest are lifted perpendicularly, and appear to be sucked under after a time altogether. A singular part of the view is the very sharp angle of the precipice, and its bank of *débris* on the American side. You also just catch a view of the foaming rapid on the right; and an attentive observer will perceive, that in the centre of the vast basin of the whirlpool the water is several feet higher than at the edges, appearing to boil up from the bottom. . . . It is said that timber and logs coming over the rapids from the Falls are detained, sometimes for months, before they are finally engulfed in the whirlpool, and doubtless it is never free from them; and perhaps there may be occasionally a counteracting current from the furious winds which rage in the chasm, or other causes, to prevent their approach to the centre; and in this way those who have escaped, have escaped merely because they were only tossed about in the outer rings of the whirl, and never approached its tremendous centre, from which, I conceive, by an under current, the water escapes to the gorge below, and from which, when once involved, nothing could possibly emerge; as the very boiling up of the waters, and the tremendous force exerted there on the trees and logs, evince. The visit to the shores of the whirlpool may be attended with the gratification of another kind of curiosity to the naturalist, for he may there see the rattlesnake in his native horrors. The boy who went with me as a guide endeavoured to find a den or cleft in which this tremendous reptile might be lying, but he was unsuccessful, although they are frequently seen and killed there, being, after all, fortunately sluggish and inactive. We saw other snakes, but not the dreaded one.—*The Canadas in* 1841, *by Sir R. Bonnycastle.*

Rhubarb.—This valuable plant should occupy a corner in every garden, however limited; and the cottager will find it useful and wholesome for himself and children, from its cooling properties. Independent of the cheap pies and tarts which are made of the stalks, they may be boiled and eaten with bread; by blanching the stalks, which is readily done, they are not only improved in flavour, and come to perfection earlier, but one-half the quantity only of sugar is required: to accomplish this, it is but necessary to exclude the light; a large flowerpot or old butter-firkin will do this, or a few hazel rods or rails covered with fern or straw, or any similar means, as circumstances may dictate. If the crowns have been mulched during winter, they will be forwarded.

Bridges in the Himalaya.—Among the characteristics of this Alpine country, intersected by numerous unfordable streams, must be mentioned the various kinds of bridges, or substitutes for bridges. The sango, or wooden bridge, is sometimes only a single plank thrown across a chasm, or perhaps a notched tree in an inclined position. But more frequent than the wooden bridge is the jhoola, or rope bridge, which consists of five or six cables, formed of a sort of grass, named moonja. These are placed close together, and above is a hollow piece of fir-tree, secured by pegs driven through below; from this hangs a loop of three or four ropes, which serves as a seat for passengers, and also as a receptacle for baggage. This block is pulled across by two pieces of twine, and the conveyance is pretty safe, but greatly alarming to a person unused to it, as the stream rushes with frightful rapidity beneath. The longest bridge of this kind I crossed was under Rampoor, where the river is two hundred and eleven feet broad. At Wangtoo it is only ninety-two feet; but the velocity of the current is so great that two of my servants, who once crossed it, were so afraid, that they would not venture again, and preferred swimming over; one of them reached the opposite bank with difficulty, being completely exhausted, and the other was drowned. The zuzum, of which there is a bad one below Numega, is formed of twigs, very indifferently twisted; there are five or six cables for the feet to rest upon, and side ropes, about four feet above the others, to hold by, connected with the lower ones by open wicker-work or ribs, one or two feet apart. The side ropes are at a most inconvenient distance from each other, and in one place they are so far asunder that a person cannot reach both with his extended arms. The ropes, from being constructed of such frail materials, do not bear much stretching, and the bridge forms a curve the sixth part of a circle. Frequent accidents have occurred here; and only a month before I crossed, in August last, two people were lost, by one of the side ropes giving way. The guides that accompanied me did not tell me of this until they saw ten or twelve of my loaded followers upon the bridge at once. I was standing on the bank at this time, and the news of the accident spread with rapidity; and some of my people were so much alarmed that they could neither move one way nor another, and stood trembling for a long time. Two, in greater terror than the rest, precipitated my tent into the Sutluj.—*Captain Gerard's Account of the Himalaya.*